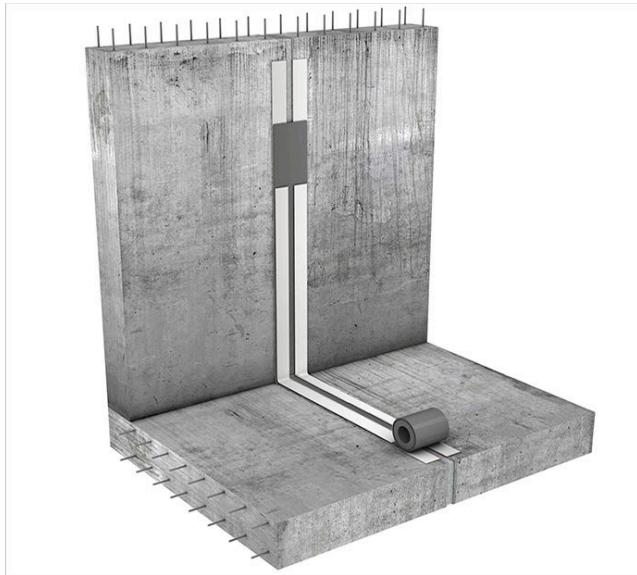




BI FLEX SYSTEM



PRODUCT DESCRIPTION

BI FLEX is a combination of waterproof elements to treat joints and cracks. It consists of an ELASTOMERIC TERPOLYMER-based ELASTIC TAPE and a two-component EPOXY ADHESIVE.

PRODUCT APPLICATION

- To apply a waterproof sealing on joints and cracks
- To seal construction joints
- Connect adjoining surfaces of joints, structures in general or prefabricated elements
- Waterproofing of tanks, canals, swimming pools and structures intended for containing water, including drinking water
- Sealing of discontinuous elements for water and/or air tightness

ADVANTAGES

- 100% waterproof with positive/negative hydrostatic pressure
- Control over hydraulic water-tightness, which is visible and repairable
- High elongation capacity and absorption of dilatation
- Excellent adhesion on different substrates, such as concrete, mortar, stone, steel and galvanised steel
- Suitable for dry or damp concrete substrates
- Practical and simple application, it does not require expensive preparatory work
- It can adapt to complex situations



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- Excellent adhesion between tape and adhesive
- Stable in contact with many chemical agents and thawing salts (see data table)
- Protection against radon
- Good resistance to U.V. radiation
- Width and thickness specifically designed for casting (10 cm) or joint (20 cm) construction

PREPARATION AND APPLICATION

The preparation and installation data refer to normal environmental conditions (temperature +20 °C; relative humidity 60%).

FOR THE CHOICE OF DIMENSION OF THE BELT, SEE THE PERFORMANCE TABLE

Preparing the surfaces

Thoroughly clean the surfaces and remove any loose material with vigorous brushing, sanding or bush-hammering.

Grind or sand metal surfaces.

High-pressure clean surfaces.

For application with negative hydrostatic pressure the concrete surfaces must be roughened/milled for at least 2 mm and the water infiltrations must be removed using TAP 3/I-PLUG rapid-setting mortar (see the relative technical data sheets).

The substrate may be wet but free of water on the surface.

Mixing BI BOND epoxy adhesive

Add all of the component B to component A (see relative data sheet).

Mix for at least two minutes with an electric mixer until a smooth mixture with no colour streaks is obtained.

Application of BI FLEX System tape on cracks and joints

On any cracks or joints, apply the adhesive tape, with a width of 20 mm supplied in the product box, to the substrate.

The adhesive tape must also be preventively applied along the mid-line of the BI FLEX System tape.

Apply a layer about 1-mm thick of the BI BOND (see relative data sheet) adhesive in the same amount on both sides of the joint/crack and across a width at least 10 mm greater than the width of the BI FLEX System tape.

Immediately remove the adhesive tape and promptly proceed to install the BI FLEX System tape, keeping the side with the previously applied adhesive tape towards you, mechanically pressing the BI FLEX System surface to expel any air bubbles.

Cover BI FLEX System with an even layer of BI BOND adhesive, which is at least 1.5 mm thick.

Immediately remove the adhesive strip applied earlier in the centre line of the BI FLEX System tape to ensure its central part can move freely.

If you foresee broad movement of cracks or joints, evaluate whether to install BI FLEX System tape in an omega shape.

Protect the tape from mechanical damage (e.g. with rubber mat).

Application on construction joints

Apply a 1 mm thickness of BI BOND on construction joints, with a width of at least 10 mm more than the width of the

BI FLEX System tape.

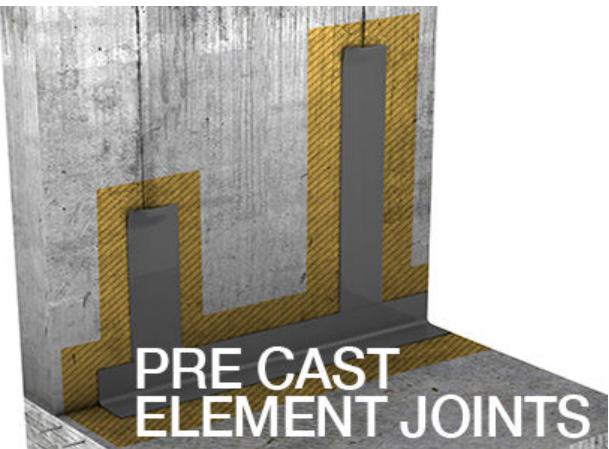
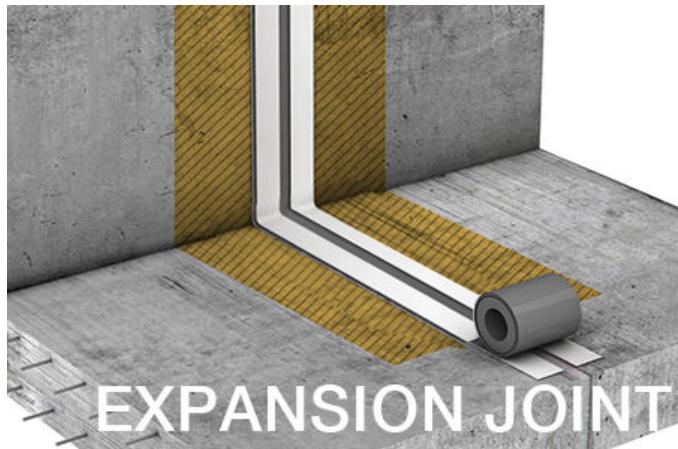
Proceed immediately with the installation of the BI FLEX System tape, mechanically pressing the surface of the tape, helping expel any air bubbles.

Covers the entire tape surface with an even layer of BI BOND adhesive, which is at least 1.5 mm thick to achieve mechanical protection.

Where required, further protect with adequate cover (metal, etc..).

Connections

Slightly sand the surfaces to improve adhesion and overlap the tape ends by 4-5 cm using BI MASTIC (see relative data sheet) to achieve elastic sealing, SUPERBOND for quick sealing (alternatively, it can also be sealed with hot air, reference temperature for 1 mm thick tape 180°C)



References available at www.volteco.com

PACKAGING AND STORAGE

BI BOND adhesive is available in two pails: 5 kg or 2.5 kg.

The BI FLEX System elastic sealing tape is packed in rolls of:

- H10, 0.5 mm of thickness 40 m rolls
- H10, 1.0 mm of thickness 20 m rolls
- H15, 1.0 mm of thickness 20 m rolls
- H20, 1.0 mm of thickness 20 m rolls
- H20, 1.5 mm of thickness 15 m rolls

BI BOND adhesive stored in the original packaging, in a dry place and at a temperature between 10 °C and 30 °C, can be used within 12 months from when it was packed.

The BI FLEX System elastic tape must be stored in the original sealed packaging and away from direct sunlight.

Open rolls that are not protected must be used within 1 month from when the sealing is broken.

CONSUMPTION AND YIELD

BI FLEX System H10: 0.6 kg of BI BOND for each metre of BI FLEX System.

BI FLEX System H15: 0.8 kg of BI BOND for each metre of BI FLEX System.

BI FLEX System H20: 1 kg of BI BOND for each metre of BI FLEX System.

WARNINGS - IMPORTANT NOTES

The application temperature must be between 10 °C and 30 °C; lower temperatures (and/or presence of humidity at the substrate) can delay the cross-linking process of the BI BOND adhesive, while higher temperatures drastically reduce the pot life.

Do not use the already mixed BI BOND adhesive if the pot life has expired (even if the consistency is good)

If the materials are incompatible, check the adhesion between BI BOND adhesive and the substrate.

For application on metal subject to high fluctuations in temperature and/or considerable length, consult the Volteco Technical Office.

PHYSICAL AND TECHNICAL SPECIFICATIONS

BI FLEX System

Feature	Test method	BI FLEX 10 cm	BI FLEX 10 cm	BI FLEX 15 cm	BI FLEX 20 cm	BI FLEX 20 cm
Appearance/Colour		Grey	Grey	Grey	Grey	Grey
Working temperature	-	-40 °C +60 °C				
Resistance to pressurised water (72h)	UNI EN 1928 B	2 bar				
Resistance to accelerated ageing (2000 h UV)	UNI EN ISO 4892-3	Test Passed				
Thickness		0.5 mm	1 mm	1 mm	1 mm	1.5 mm
Joint shear strength with BI MASTIC	UNI EN 12317-2	100 N/5cm	200 N/5cm	200 N/5cm	200 N/5cm	300 N/5cm
Tensile strength	UNI EN 12311-2	100 N/5cm	200 N/5cm	200 N/5cm	200 N/5cm	300 N/5cm
Tensile elongation	UNI EN 12311-2	> 600%	> 600%	> 600%	> 600%	> 600%

Feature	Certifying body	Test method	Certified performance (**)
Radon diffusion coefficient - BI FLEX	CZECH TECHNICAL UNIVERSITY IN PRAGUE	ISO/TS 11665-13	2,5 E-11 m ² /s
Radon diffusion coefficient - BI	CZECH TECHNICAL	ISO/TS 11665-13	1,9 E-11 m ² /s

Feature	Certifying body	Test method	Certified performance (**)
FLEX overlap sealed with BI MASTIC	UNIVERSITY IN PRAGUE		
BI FLEX System - BI BOND H10			
Feature	Test method	0.5 mm thickness	1 mm thickness
Concrete peeling resistance (180°)	ASTM D 903	> 0.5 kN/m	> 1.5 kN/m
Positive pressure water resistance on open joint*	Int. method	2 cm: 1.5 bar	1 cm: 3 bar 2 cm: 3 bar
Negative pressure water resistance on open joint*	Int. method	-	1 cm: 1 bar 2 cm: 0.5 bar
Negative pressure water resistance on dynamic joint (100% elongation)*	Int. method	-	0.5 bar
Adhesion to damp concrete	UNI EN 13578	> 2.0 N/mm ²	> 2.0 N/mm ²
Water-tightness on cracks	UNI EN 1062-7 (Met.C2) UNI EN 1928	Class A5 (2.5 mm for 24 hrs 200 KPa for 24 hrs): Test passed	Class A5 (2.5 mm for 24 hrs 200 KPa for 24 hrs): Test passed
Chemical resistance	Int. method	Sea water: resistant 5% Hydrochloric acid: resistant 5% Ammonia: resistant Calcium hydrate: resistant Weak organic acids: **resistant	Sea water: resistant 5% Hydrochloric acid: resistant 5% Ammonia: resistant Calcium hydrate: resistant Weak organic acids: **resistant
Suitable for contact with drinking water	Determination of global migration Ministerial Decree 174 of 04/06/2024	SOCOTEC ITALIA SRL Report n° LF53030/23 - LF53031/23	SOCOTEC ITALIA SRL Report n° LF53030/23 - LF53031/23
Suitable for contact with drinking water	Determination of the specific transfer Ministerial Decree 174 of 04/06/2024	CHELAB SRL Report n° 17/000244151	CHELAB SRL Report n° 17/000244151

*Tests were carried out by testing an overlap area bonded with BI MASTIC sealant

SISTEMA BI FLEX - BI BOND H15 / H20

Feature	Test method	1 mm thickness	1.5 mm thickness
Concrete peeling resistance (180°)	ASTM D 903	> 1.5 kN/m	> 1.5 kN/m
Positive pressure water resistance on open joint*	Int. method	1 cm: 3 bar 2 cm: 3 bar	-
Negative pressure water resistance on open joint*	Int. method	1 cm: 1 bar 2 cm: 0.5 bar	2 cm: 1 bar
Negative pressure water resistance on dynamic joint (100% elongation)*	Int. method	0.5 bar	1 bar
Adhesion to damp concrete	UNI EN 13578	> 2.0 N/mm ²	> 2.0 N/mm ²
Water-tightness on cracks	UNI EN 1062-7 (Met.C2) UNI EN 1928	Class A5 (2.5 mm for 24 hrs 200 KPa for 24 hrs): Test passed	Class A5 (2.5 mm for 24 hrs 200 KPa for 24 hrs): Test passed
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Feature	Test method	1 mm thickness	1.5 mm thickness
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*Tests were carried out by testing an overlap area bonded with BI MASTIC sealant

The quoted data are obtained in a laboratory at +20°C and 60% RH.

WATCH VIDEOS AND INSIGHTS

[Safety Data Sheets](#)



[Declaration of performance](#)



[Specifications](#)



[Technical drawings and BIM](#)



[EPD Declaration](#)



[YouTube Video](#)



SAFETY

Refer to the related Safety Data Sheet.

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